liam Rolfe, of St. Louis, and Messrs. Channing, Alford and Wallace, representing the Committee on Work-Periods. The report was finally adopted by an overwhelming vote.

The Drury report was described as a general survey of all industries operating continuously twenty-four hours a day. The leading continuous industries investigated are divided into four groups as follows:

Group I: Iron and steel, non-ferrous metals, glass, Portland cement, lime, brick and pottery.

Group II: Heavy chemicals, fertilizers, explosives, dyes, industrial alcohol, wood distillation, refined corn products, soap, glue, drugs, etc., electro-chemical industries, sugar, table salt, petroleum, cottonseed oil and other oils.

Group III: Paper, flour, rubber, breakfast foods, automobiles, textiles and mines.

Group IV: Power, gas, water supply, ice, shipping, railroads, street railways, telegraph and telephone, mails and express, policemen, firemen and watchmen.

SCIENCE SECTION OF THE ASSOCIATION OF COLLEGES AND PREPARATORY SCHOOLS OF THE MIDDLE STATES AND MARYLAND

AT the annual meeting of the Association of Colleges and Preparatory Schools of the Middle States and Maryland held at Swarthmore College on November 26, 1921, Science Section was organized. Dr. Bertha M. Clark, William Penn High School, Philadelphia, presided at the organization meeting. A constitution prepared by a committee consisting of Dr. H. J. Creighton, Swarthmore; Dr. James Barnes, Bryn Mawr; Dr. Ida A. Keller, Philadelphia High School for Girls; Dr. W. B. Meldrum, Haverford; and Dr. R. H. True, University of Pennsylvania, was presented and adopted by unanimous vote.

According to its constitution the Science Section has been organized to bring about active cooperation between the colleges and preparatory schools in improving the teaching of science. The following officers were elected to serve one year:

President: Dr. Thomas D. Cope, Randal Morgan Laboratory of Physics, University of Pennsylvania.

Vice-president: Mr. Charles E. Dull, South Side High School, Newark, N. J.

Secretary: Miss Margaretta Atkinson, Philadelphia High School for Girls.

Treasurer: Dr. Walter Steckbeck, Macfarlane Hall of Botany, University of Pennsylvania.

The following councillors were elected to serve two years:

Dr. Gellert Alleman, Swarthmore College.

Dr. Bertha M. Clark, William Penn High School, Philadelphia.

Dr. Raymond Brownlee, Stuyvesant High School, New York City.

The council has decided to hold the next meeting of the section at the time of the next annual meeting of the Association of Colleges and Preparatory Schools. This meeting will be held at the Tower Hill School, Wilmington, Delaware, during the Thanksgiving recess in 1922. An attractive program is being prepared and plans are being made to increase materially the membership of the section. Due announcement of the program will be made public.

HERSCHEL CENTENARY PILGRIMAGE[1]

THE centenary of the death of Sir William Herschel, the first president of the Royal Astronomical Society, was commemorated on August 25 at Slough, where he lived and carried out so much memorable work. The Royal Astronomical Society, with Sir F. Dyson, the astronomer royal, made a pilgrimage to the chief places associated with Herschel's history, and were welcomed by the chairman (Mr. E. T. Bowyer) and other members of the District Council of Slough, and representatives of the Herschel family, in whose occupation the astronomer's house—Observatory House—still remains.

The first place to be visited was Old Upton Church, a competitor with Stoke Poges for the honor of having inspired Gray's *Elegy*. Herschel's body lies beneath the flags of the ancient chancel, on which there rested a star-shaped wreath of flowers. The church register records the date of his marriage with "Mary Pitt, widow, of this parish," May 8, 1788, and the baptism of his only son, John Frederick Wil-

[1] The London *Times*.

liam, who was afterwards also to contribute to the astronomical fame of the family. An old thatched barn, which Herschel used as a workshop, was visited next, and the party afterwards went through Upton Court, where his wife's first husband, John Pitt, lived. It belongs to Lord Harewood, and has been for some time untenanted. In the afternoon the visitors were welcomed to Observatory House by Miss Herschel. There they saw many interesting personal relics—some in the house itself, some in an adjoining cottage which has been made into a little museum, and some in the garden. Against the back wall of the garden, embowered in foliage, rests a section of Herschel's great telescope, 10 feet or 12 feet in length. A circular ridge on the lawn marks the place where the telescope formerly stood. In the hall of the house is one of two mirrors which were cast for the big telescope. The mirror and tube of the smaller telescope which Sir John Herschel took to the Cape to survey the heavens of the southern hemisphere were also shown.

At luncheon, which was served at the Old Crown Hotel, at one time part of the property of Sir William Herschel, the Reverend Sir John Herschel said that the great work of Sir William Herschel at Slough was his investigation of the structure of the heavens. He put forward the view that the whole visible universe was like a couple of soup-plates put face to face. That theory, he believed, still held the field. Another great discovery was that of nebulæ. Herschel at first thought they could be resolved into separate stars, but afterwards came to the conclusion that in certain cases these dull, fuzzy things were a shining fluid. That some of the nebulæ were resolvable into stars was proved later by Lord Rosse, and the hypothesis of the shining fluid was confirmed many years later by Huggins. Sir William Herschel was much before his age in his speculations. Though they fell into discredit for a time, he had since come into his own again and had been found to have made very few mistakes.

Sir Frank Dyson said he thought what Sir J. Herschel had said about Sir William Herschel was true. He was undoubtedly a very great man. In addition to the wish to fathom the heavens, he had the great mechanical and engineering skill which enabled him to make his telescopes. He had also the prodigious enthusiasm and energy needed to carry out his big surveys.

Dr. Dreyer added further instances of Sir William Herschel's clear insight. About the year 1785 he announced that the sun was traveling through space towards the constellation Hercules. Though the evidence was perhaps slender at the time, and nobody, he believed, took serious notice of the matter, the discovery was undoubted. He also first suggested the "grindstone theory" of the Milky Way—that there was a great layer of stars between two parallel planes.

THE INTERNATIONAL GEOLOGICAL CONGRESS

THE twelfth International Geological Congress was held in Belgium during the month of August with a large and influential delegation of some 500 geologists from all parts of the word, except former enemy countries. A number of geological excursions were organized covering the most interesting sections of Belgium, to which a large number subscribed. France was well represented by men like de Margerie, Lacroix, Gentil, Kilian, Bigot Lory, Haug, Cayeux, Fallot, Yung and others; while Switzerland had sent Lugeon and Argand, both masters of tectonics. Especially interesting was Argand's lecture on "The Tectonics of Asia," illustrated with a tectonic map of the Eurasian continent which no doubt marks an epoch in structural geology. This synthetic and clever graph of the Eurasian continent contained more than 3,500 geological sections, transferred in tectonic form and colors on the map which served to illustrate the opening public lecture of the congress.

Spain was well represented, and Director Cesar Rubio, of the Instituto Geologica de España, with a goodly contingent of geologists from the Iberian Peninsula, took part in the congress. The invitation given by Spain was accepted, so that the fourteenth International Congress of Geology is to be called for 1925 in Spain.

A large number of United States geologists attended the congress. Dr. David White, chief geologist of the U. S. Geological Survey, was